

### Patent Claims

- 5 1. Method of preparing a birefringent marking comprising polymerised liquid crystal material, by printing a polymerisable liquid crystal material onto at least one surface of a reflective substrate and polymerising the liquid crystal material.
- 10 2. Method according to claim 1, wherein the liquid crystal material is a nematic or smectic liquid crystal material.
3. Method according to claim 1 or 2, wherein the substrate comprises at least one metallic or metallised layer.
- 15 4. Method according to claim 3, wherein the metal is selected from aluminium, gold and copper.
5. Method according to claim 1 or 2, wherein the substrate comprises at least one layer of reflective pigments.
- 20 6. Method according to claim 5, wherein the reflective pigments are selected from interference or pearlescent pigments and liquid crystal pigments.
- 25 7. Method according to at least one of claims 1 to 6, wherein the liquid crystal material comprises at least one compound which induces and/ or enhances planar alignment.
8. Method according to claim 7, wherein the compound inducing and/or enhancing a planar alignment is a surfactant.
- 30 9. Method according to at least one of claims 1 to 8, wherein the polymerised liquid crystal layer has a splayed structure.
- 35 10. Method according to claim 9, wherein the polymerised liquid crystal layer exhibits substantially planar alignment at its surface facing the substrate and substantially homeotropic alignment at

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its opposite surface.

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11. Birefringent marking obtainable by a method according to at least one of claims 1 to 10.
12. Use of a method or a birefringent marking according to at least one of claims 1 to 11 in decorative, security, authentication or identification applications.
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13. Security, authentication or identification marking, thread or device comprising at least one birefringent marking according to claim 10.
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14. Document of value, hot stamping foil, reflective foil or optical data storage device comprising at least one birefringent marking of claim 11 or at least one security, authentication or identification marking, thread or device according to claim 13.

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